

24-7800

28018
S/081/61/000/015/007/139
B101/B110

AUTHORS: Matsonashvili, B. N., Skanavi, G. I.

TITLE: Problem of the dielectric relaxation losses in alkali halide crystals

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 15, 1961, 33, abstract 156228 (Sb. "Fizika dielektrikov", M., AN SSSR, 1960, 7-12)

TEXT: The problem of the activation energy U of reorientation of the complexes when applying an alternating electric field was studied for alkali metal halides. For LiF, KCl, KBr, it was calculated that $dU/dT \approx (2.5 - 8.5) \cdot 10^{-3}$ ev/deg, and $d^2U/dT^2 \approx 10^{-5}$ ev/deg². The concentration n of the associated relaxing complexes and the concentration n_0 of the defects determining the conductivity were determined. It was found that at $T < 500^\circ\text{C}$, $n \gg n_0$, i. e., the major part of the vacancies is in associated state. The dielectric losses of the alkali metal halides mainly depend on the concentration of the non-

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X

Problem of the dielectric relaxation ...

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associated vacancies. [Abstracter's note: Complete translation.]

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S/181/62/004/005/018/055
B125/B104

AUTHORS: Gubkin, A. N., and Matsonashvili, B. N.

TITLE: The physical nature of the electret effect in Brazilian wax

PERIODICAL: Fizika tverdogo tela, v. 4, no. 5, 1962, 1196-1205

TEXT: The electret effect in Brazilian wax is due to remanent polarization. After polarization in a powerful electric field (field strength 1.5-15 kv/cm) at elevated temperature (20-70°C) the electric field was turned off and the discharge current I_{dis} measured. When the discharge current had dropped to zero, the specimen was heated and the depolarization current I_{dep} determining the remanent polarization was measured. The remanent polarization, which varies very slowly, increases from $1 \cdot 10^{-10}$ to $5 \cdot 10^{-8}$ coulomb/cm² with polarization temperature and electric field strength. Charges opposite to those of polarization may reach the surface of the electret by spark-over in the air between the electret and the electrodes or in a similar way. When the external field is switched off, the free charges of the dielectric are shifted in the internal field of the electret. The

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The physical nature of the ...

S/181/62/004/005/018/055
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The physical nature of remanent polarization has hitherto not been explained. The shift of electrons in the electric field and their subsequent trapping on the local levels is important for remanent polarization. There are 8 figures. The most important English-language reference is: M. M. Perlman. J. Appl. Phys., 31, No. 2, 356, 1960.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR Moskva
(Physics Institute imeni P. N. Lebedev AS USSR, Moscow)

SUBMITTED: December 23, 1961

Card 3/3

GUBKIN, A.N.; MATSONASHVILI, B.M.

Electret effect in dielectrics. Elektrichestvo no.8:56-60
Ag '62. (MIRA 15:7)

1. Fizicheskiy institut imeni Lebedeva AN SSSR.
(Dielectrics) (Electrets)

MATSONASHVILI, B.N., FRANK-KAMENETSKIY, L.A., prof., osv. n. n.

[In the depths of the atom; V glub' atoma; sbornik statei.
Moskva, Nauka, 1964. 301 p. (MIRA 1964)]

1. Akademiya nauk SSSR. 2. Zamestitel' glavnogo redaktora
zhurnala "Priroda" (for Frank-Kamenetskiy)

LERNER, M.M., kand. tekhn. nauk, dots. MATSONASHVILI, I.A.,
kand. fiz.-matem. nauk; MENNE, V.I., doktor tekhn. nauk,
prof.; TAREYEV, S.M., doktor tekhn. nauk, prof., red.

[Electric engineering materials: electric condensers, wires,
and cables] Elektrotekhnicheskie materialy, elektricheskie
kondensatory, provoda i kabeli [1965]. Moskva. 1965.
158 p.

1. Akademiya nauk SSSR. Institut naukoobrazovaniya.

L 57564-65 ENI(1)/EPA(s)-2/EMI(m)/EEC(t)/T/EWP(t)/EWP(b)/EWA(c) Pt-7/Pl-4
IJP(c) JD/GG

60
39
13

ACCESSION NR: AP5015138

UR/0048/65/029/006/0994/0998

AUTHOR: Bogdanov, S.V.; Kiseleva, K.V.; Matsonashvili, B.N.; Rassushin, V.A.; Sentyurina, N.N.

TITLE: Effect of doping with iron on some physical properties of barium titanate single crystals / Report, 4th All-Union Conference on Ferroelectricity held in Rostov-on-the-Don 12-18 Sept 1964/

SOURCE: AN SSSR Izvestiya, Ser. fizicheskaya, v. 29, no. 6, 1965, 994-998

TOPIC TAGS: ferroelectric crystal, barium titanate, doping, iron, crystal structure, phase transition, dielectric constant, electric conductivity, optic absorption

ABSTRACT: The authors have measured the dielectric constant, electrical conductivity and optical transmission of BaTiO_3 single crystals containing up to 6 at.% Fe and have investigated the structure of the crystals by x-ray diffraction. At room temperature the structure of crystals containing from 0.48 to 2.6 at.% Fe was tetragonal; crystals containing more than 2.6 at.% Fe were cubic and their lat

CRYSTALS CONTAINING MORE THAN 2.0 AT.% Fe WERE CUBIC AND THEIR LAT-

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ACCESSION NR: AP5016138

lattice constants were independent of the Fe content. When the temperature was reduced, the (431) reflections from crystals that were cubic

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1-57564-68

ACCESSION NR: AP5016138

wavelengths from 0.4 to 2.0 micron showed that the presence of Fe shifts the absorption edge toward longer wavelengths. Three absorp-

4 figures.

ASSOCIATION: Fizicheskiy Institut Im. P.N. Lebedeva Akademii nauk SSSR
(Physics Institute, Academy of Sciences of the SSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: SS, IC

NR REF SOV: 006

OTHER: 018

Card 3/3

ACC NR: AP6037020

(A,N)

SOURCE CODE: UR/0181/66/001/011/3439/3442

AUTHOR: Matsonashvili. B. N.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskii institut AN SSSR)

TITLE: Temperature dependence of the electric conductivity of BaTiO_3 , both pure and with iron and cobalt impurities, reduced in hydrogen

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3439-3442

TOPIC TAGS: barium titanate, temperature dependence, Curie point, semiconductor conductivity, impurity conductivity, activation energy, optic spectrum

ABSTRACT: The temperature dependence was investigated at 800, 1000, and 1200C for reduction times of 5, 4, and 2 hours respectively. Measurements of the temperature dependence were at a constant voltage by means of two-probe and four-probe methods described by the author earlier (FTT v. 8, 3232, 1966). In the case of weakly reduced crystals (800 - 1000C) an anomaly appeared in the conductivity σ at the point where the plot of $\log \sigma$ vs. $1/T$ (T = temperature) exhibited a kink near the Curie point. In some cases the kink was observed both before and after reduction. In crystals with Fe impurities, the change in the conductivity after reduction depends strongly on the type of conductivity of the samples, increasing strongly for n-type and decreasing for p-type. In crystals with Co, reduction increases noticeably the conductivity when the content of the cobalt is small, and decreases it when the content is large (5.0 at.%). The article reports also the effects of etching prior to mea-

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ACC NR: AP6037020

surements, the effects of heat treatment, and the average values of the activation energies for different contents of impurity, as well as the changes in the optical spectrum after reduction. No anomalies were observed in the case of strongly reduced crystals (1200C). The results are interpreted from the point of view of the effect of the F_2 -centers on the conductivity under various conditions. The conclusions agree well with optical-transmission data obtained for the crystals. The author thanks B. M. Vul for interest in the work and S. V. Bogdanov and V. A. Rassushin for critical remarks. Orig. art. has: 2 figures and 1 table.

SUB CODE: 20/ SUBM DATE: 23May66/ ORIG REF: 004/ OTH REF: 001

Card 2/2

ACC NR: AP6036963

(A, N)

SOURCE CODE: UR/0181/66/008/011/3232/3235

AUTHOR: Matsonashvili, B. N.

ORG: Physics Institute im. P. N. Lebedev, AN SSSR, Moscow (Fizicheskii institut AN SSSR)

TITLE: Temperature dependence of the electric conductivity of BaTiO_3 crystals, pure and with iron and cobalt impurities

SOURCE: Fizika tverdogo tela, v. 8, no. 11, 1966, 3232-3235

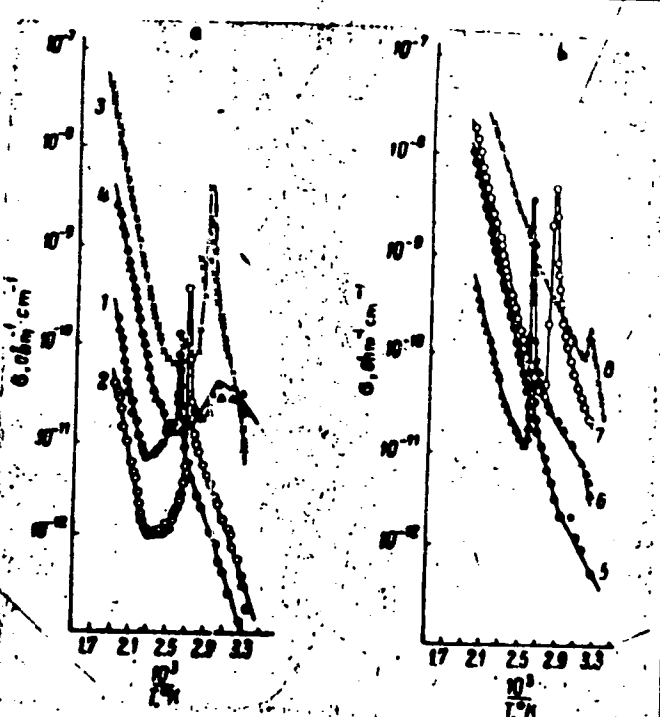
TOPIC TAGS: barium titanate, electric conduction

ABSTRACT: The temperature dependence of the electric conductivity σ was studied in the 20-300°C range at a voltage of 2-15 V/cm on pure BaTiO_3 crystals and crystals containing 0-5 at. % Fe and Co. An anomaly of σ was observed at 15-40°C in pure crystals and at 50-70°C in those containing Fe and Co. In the latter, σ is less than in pure crystals. Such behavior of σ is due to a change in the type of conductivity associated with doping with acceptor impurities. The measured temperature dependence of σ is shown in Fig. 1. A study of optical transmission in the 0.3-2.0 μ range showed minima at 0.6 and 1.8 eV, due to the presence of F_2 - and F_1 -centers in all the samples (with and without impurities). Below the Curie point, the conductivity of BaTiO_3 crystals is due mainly to F_2 -centers. Above the anomalous range, σ is chiefly determined by the thermal excitation of the dopants. A definite contribution to σ is

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ACC NR. AF6036963

Fig. 1. Temperature dependence of electric conductivity of BaTiO_3 crystals with Fe (a) and Co (b).
Fe content, at. %: 1 - 0, 2 - 0.6, 3 - 2.0, 4 - 5.0 (crystal 4 was considerably reduced).
Co content, at. %: 5 - 0, 6 - 0.2, 7 - 2.0, 8 - 5.0.



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ACC NR: AP6036963

made by F₁-centers, especially at high temperatures. Author expresses his thanks to B. M. Vul for his interest in the work and to S. V. Bogdanov and V. A. Rassushin for discussing the results and critical comments. Orig. art. has: 1 figure and 1 table.

SUB CODE: 20/ SUBM DATE: 08Apr66/ ORIG REF: 006/ OTH REF: 013

Card 3/3

6-291

9(6)

AUTHORS:

Kurkina, M. S., Engineer, S/119/60/000/03/006/0.7
B014/B007
Kurkin, Yu. L., Engineer, Matsonashvili, R. D., Engineer,
Shumskiy, A. N., Engineer, Shumskaya, S. T., Engineer

TITLE:

A Universal Apparatus for Infralow Frequencies (UPINCh)

PERIODICAL:

Iziborostroyeniye, 1960, Nr 3, pp 14-16 (USSR)

ABSTRACT:

In the present paper the methods of carrying out a general investigation of automatic control systems within the region of low frequencies are dealt with, and the apparatus mentioned in the title is briefly described. It is found that during the feeding-in of a sinusoidal voltage into the automatic control system under investigation, a non-sinusoidal voltage exists at the output of the latter, and the authors write down equation (1) for the effective value of the output voltage. The Fourier-expansion of this equation is dealt with, and the Fourier-coefficients and the solutions of equations (1) to (4) are calculated by means of the UPINCh. This idea was suggested by P. Rule of Eastern Germany, who also gave the principle of the aforementioned apparatus. In figure 3 the block wiring diagram for measuring the effective value of the output voltage, the amplitude of the fundamental frequency and the coefficient of nonlinear distortion is shown. Measurement of the phase shift

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A Universal apparatus for Infralow Frequencies
(UFI INCh)

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between the harmonic oscillations occurs according to equation (4), and the corresponding block diagram is shown in figure 4. Furthermore, the generator for low-frequency voltages (Fig 6) is discussed. This new type of generator is a magnetoelectric generator with electric reverse feedback. The square voltage is generated by a relay connected to the generator. The simplified scheme of the electric multiplication apparatus is shown in figure 7. This apparatus served the purpose of compensating the nonlinearities. The apparatus described here makes it possible to measure effective values of voltages of 0 - 30 v and of the fundamental amplitude of up to 50 v within the frequency range of from 0.01-0.5 cps. Measurements of the coefficient of nonlinear distortion are carried out at frequency f from 0.01 to 0.05 cps. Phase shift is effected within a frequency range of from 0.01 - 0.5 cps. The authors thank G. A. Martynov and Yu. I. Yanova for their valuable assistance in carrying out this investigation. There are 7 figures and 2 Soviet references.

Card 2/2

Matsonashvili, R.D.

91089

9.2510

S/120/60/000/03/020/055
EO41/E521

AUTHORS: Kurkin, Yu.L., Kurkina, N.S., Matsonashvili, R.D.,
Shumskiy, A.N. and Shumskaya, S.T.

TITLE: Study of an Electrodynamic Multiplier

PERIODICAL: Priory i tekhnika eksperimenta, 1960, No 3,
pp 82-84

ABSTRACT: The instrument is shown, with the cover removed, in Fig 2. A simplified circuit diagram is in Fig 1. EM_1 and EM_2 are electromagnets, PC_1 and PC_2 are moving coils, PD_{1-4} are photo-electric pick-offs, y_1 and y_2 are d.c. amplifiers. Each moving coil compares the torques proportional to the product of the current in the coil and the air-gap flux density. A feedback circuit using the pick-offs and amplifiers obliges Eq (1) to be observed. Since fixed resistances are connected in series with the coils, the instrument may be used as a voltage multiplier as in Eq (4), or if the inputs U_1 and U_0 in Fig 1 are connected together, Card 1/2 as a square root extractor. The size of the unit is

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E041/E521

Study of an Electrodynamic Multiplier

220 x 135 x 180 mm³. Although the use of feedback avoids errors due to amplifier drift or temperature instability of the pick-offs, the instrument is still vulnerable to parasitic mechanical torques. The maximum working torque is 4 gm.cm. The error contributions are those of friction (10^{-5} gm.cm), the flexible connections (10^{-6} gm.cm), misalignment and out-of-balance. The misalignment effects are due to the inclusion of small ferromagnetic particles in undesirable places. The capacitances C_1 and C_4 shown in Fig 1 are necessary to prevent the system breaking into self-oscillations. The maximum input voltage is 100 V, the accuracy in multiplication is 1.10^{-3} and in division 2.10^{-3} . The frequency response is flat to 0.5 c/s. G. A. Martinov is thanked for his assistance. There are 2 figures and 2 Soviet references.

SUBMITTED: April 4, 1959

Card 2/2

41

86759

S/120/60/000/006/035/045

E073/E335

9.6000 (3702, 1099, 1160)

AUTHORS: Kurkin, Yu.L., Kurkina, N.S. and Matsonashvili, R.D.

TITLE: Instrument for Measuring the Potential of Magnetic Surge Fields

PERIODICAL: Pribery i tekhnika eksperimenta, 1960, No. 6.
pp. 122 - 123

TEXT: An instrument is described which is intended for measuring magnetic surge fields between 1 and 1 000 Oe with an accuracy not less than $\pm 2-3\%$. The instrument is based on utilising the Hall effect, i.e. the Hall e.m.f., which is highly sensitive to the applied voltage (Ref. 1). Of the hitherto investigated materials $\bar{n} - Ge$ has the highest sensitivity. In no-load operation the basic source of error of the instrument is the temperature dependence of the Hall e.m.f., which is due to of the dependences of the concentration and the mobility of the current carriers on the temperature $n(T^{\circ})$ and $\mu(T^{\circ})$. Their relative importance depends on the supply circuit of the pick-up. To ensure normal operation of the pick-up, "contact phenomena" have to be excluded. For this purpose it is

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E073/E335

Instrument for Measuring the Potential of Magnetic Surge Fields

necessary that the contacts should be non-emitting, non-rectifying and they should have a low resistance. Good contacts can be obtained by grinding the surface, followed by pickling in a solution consisting of 10 cm³ hydrogen peroxide and a few drops of liquid ammonia. The contacts should be soldered by tin alloyed with 10% antimony. A diagram of the basic circuit of the instrument is included. The Hall probe is fed from stabilised equipment which ensures thermal stabilisation of the Hall e.m.f. by changing the intensity of the current which flows through the probe. As a temperature pick-up a normally barred diode is used, which is connected in parallel to resistances. The diode is in thermal contact with the Hall pick-up. By varying the impedance of the divider (by changing the resistance R_1) the change in the current intensity with temperature in the range of 20 - 40 °C can be obtained which is necessary

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S/120/60/000/006/035/045

E073/E335

Instrument for Measuring the Potential of Magnetic Surge Fields

for achieving compensation. The instrument has a pointer and also an oscillographic output. The duration of the measured pulses is 20 μ s to 20 ms (oscillographic output) and 100 μ s to 20 ms (pointer indication). Measurements have shown that for a pick-up of 1.2 x 1.5 x 0.02 cm, made of 16 Ω Ge, the amplitude of the ripples due to pulsations of the supply voltage, the microphone effect of the tubes and other influences will not exceed 1 to 1.5% on the most sensitive scale of the instrument. Acknowledgments are expressed to A.P. Pyatnitskiy for checking the manuscript and for valuable advice and to V.V. Grigorashvili for designing the instrument. There are 2 figures and 1 Soviet reference.

SUBMITTED: October 15, 1959

Card 3/3

20526

S/115/ 61/000/001/004/007
B128/B201

16.9500 (1031, 1121, 1132)

AUTHORS: Kurkin, Yu. L., Kurkina, N. S., Matsonashvili, R. D., Shumskii, A. N., and Shumskaya, S. T.

TITLE: Study of a generator for very low frequencies

PERIODICAL: Izmeritel'naya tekhnika, no. 1, 1961, 32-35

TEXT: To study automatic control systems, generators are necessary which produce oscillations in the range of 0.01-20 cycles. The authors describe an electromechanical generator for very low oscillation frequencies, the principle of which had been suggested by F. Ruhl (Eastern Germany). The system shown in Fig. 1 consists of a magnetoelectric system with magnetic feedback. The movable system of this device is not in equilibrium with its axis of rotation produces a certain mechanical torque. This torque is kept in equilibrium by a counteracting torque which is produced in the frame, and which is controlled by the pickup. The equilibrium of this system is controlled by a servosystem, and the input voltage of the servosystem is the desired oscillation of very low frequency. The authors studied the possible errors very thoroughly. It was found that nonlinear disturbances do not

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Study of a ...

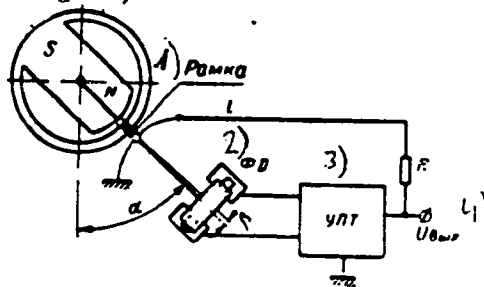
S/115/61/000/001/004/CC7
B128/B201

exceed 0.5%, and that the error caused by centrifugal forces does not exceed 0.1%. Technical data of the generator: two electrical sine-wave voltages offset in phase by 90° , where the 90° phase shift is observed to within $\pm 0.2\%$; frequency range: 0.01 to 1 cycle, $\pm 0.2\%$. Maximum output voltage is equal to 100 units as referred to the amplifier input voltage as the unit. Amplitude fluctuation of the output voltage is smaller than $\pm 0.5\%$. Nonlinear distortions are smaller than 0.5%. Maximum noise voltage at the output is 0.3 units as referred to the amplifier input voltages as the unit. G. A. Martynov and Yu. I. Yanova took part in the present investigation.

Legend to Fig. 1: S - N is the movable magnet;

1) frame; 2) pickup; 3) d-c amplifier;

4) output voltage.



Card 2/2

25

Electrolysis Apparatus for Production of Gas for Use During Cutting of Metals. (In Russian.) M. M. Matoy. *Avtogennoe Deto* (Welding), no. 2, 1947, p. 28-34.

Describes generator in which petroleum is cracked by means of an electric arc, resulting in production of a gas containing 53.5% H₂, 21.9% unsaturated hydrocarbons, 18.0% paraffins, and small amounts of CO, CO₂, SO₂, O, and N₂. Tells how to use this gas along with oxygen for cutting of metals, instead of acetylene. Details of the equipment are shown diagrammatically.

MATSOV, M. M.

Matsov, M. M. "Automatic welding in shipbuilding" (Experience of the Plant imeni Marti), Trudy Vsesoyuz. konf-tsi po avtomat. svarke pod flyusom, 3-6 October 1947, Kiev, 1948, pp. 41-42.

SO: U-3261, 10 April 53 (Letopis 'Zhurnal 'nykh Statey No. 11, 1949)

FAYERMAN, A.I.; MATSOV, M.M.

Method of calculating depreciation and expenditures for the repair of
welding equipment. Avtom.svar.6 no.3:50-54 My-Je '53. (MLRA 7:5)
(Welding)

MATSOV, M. M.

Subject : USSR/Electricity AID P - 862
Card 1/1 Pub. 11 - 8/13
Authors : Fayerman, A. I., Matsov, M. M., Stoma, V. V. and
Bukhbinder, N. I.
Title : Selection of semi-automatic welder arrangement
Periodical : Avtom svar., #4, 78-82, J1-Ag 1954
Abstract : Comparison of operating performance and initial cost of
three types of semi-automatic welders is presented with
2 controlling circuits and 3 tables with operational data.
Institution : None
Submitted : J1 20, 1953

MATSOV, M. M.

137-58-5-9926

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 5, p 150 (USSR)

AUTHORS: Matskevich, V. D. . Be!'chuk, G. A. . Dreyzenshtok, Z. B. .
Matsov, M. M.

TITLE: The Role of Welded Fabrication in the Shipyards of Leningrad
(Rol' svarochnogo proizvodstva na sudostroitel'nykh zavodakh Leningrada)

PERIODICAL: V sb. . Svarochnoye proiz-vo. Leningrad, Lenizdat, 1957,
pp 177-187

ABSTRACT: A brief review is presented of the development and the current state of welding fabrication at the shipyards of Leningrad. Significant successes in welding applications achieved by Leningrad shipbuilders are noted.

B. V.

1. Ships--Construction 2. Welding--Applications

Card 1/1

MATSOV, M.M., inzh.

Welding operations in the construction of the atomic icebreaker
"Lenin." Sudostroenie 27 no.8:53-56 Ag '61. (MIRA 14:9)
(Lenin (Atomic ship)--Welding)

VAYNERMAN, Abram Yefimovich; MATSOV, M.M., inzh., retsenzent;
SHRAYERMAN, M.R., kand. tekhn. nauk, retsenzent; RUSSO,
V.L., nauchn. red.; SHISHKOVA, L.M., tekhn. red.

[Welding of hull structures in a carbon dioxide atmosphere]
Svarka korpusnykh konstruktsii v srede uglekislogo gaza.
Leningrad, Sudpromgiz, 1963. 147 p. (MIRA 16:9)
(Ships--Welding) (Protective atmospheres)

MATSOV, Yu.K.; Primal ~~schastiye~~ SHCHEVELEV, A.N.

New compositions of skidproof mastics for river boats. Lako-
kras.mat. i ikh prim. no.4:44-45 '62. (MIRA 16:11)

MATSOVA, L.G.; LABENSKIY, A.S.

Condensation products of l-ephedrine and d-pseudoephedrine with acetone. Zhur.ob.khim. 28 no.9:2598-2601 S '58. (MIRA 11:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy khimiko-farmatsevticheskiy institut imeni S.Ordzhonikidze.

(Ephedrine) (Pseudoephedrine)
(Condensation products (Chemistry))

MATSOVKIN, P.

**Three-seam cutting of coal in the Cherekhove Coal Basin. Mast.
vgl. 3 no.6:11-12 Je '54. (MIRA 7:7)**

- 1. Nachal'nik shakhty No. 8 kombinata Vostsibugel'.
(Cherekhove Coal Basin—Coal mines and mining) (Coal mines
and mining—Cherekhove Coal Basin)**

MATSOYAN, S. G.

MATSOYAN, S. G. - "Synthesis of 1-aryl-4-piperidones and Their Conversion."
Sub 29 Jan 52, Inst of Organic Chemistry, Acad Sci USSR. (Dissertation
for the Degree of Candidate in Chemical Sciences).

SO: Vechernaya Moskva January-December 1952

MATSOVIAN, S. G.

7

Chem

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Organic Chemistry

Acetylene derivatives. CXXVI. Synthesis of polycyclic compounds related to steroids. 14. Synthesis of tetra-cyclic ketones with a methylcyclopentane B ring. I. N. Nazarov, V. P. Kucheryav, and L. N. Strakhova. *Bull. Acad. Sci. U.S.S.R., Div. Chem. Sci.* 1952, 427-35 (Engl. translation).—See C.A. 47, 5306c. CXXVII. Synthesis of polycyclic compounds related to steroids. 13. Structure of products of condensation of 2-methoxy-1,3-butadiene with 2-methyl-2-cyclohexene-1-one and methyl methacrylate. I. N. Nazarov and S. I. Zolotarev. *Ibid.* 643-7.—See C.A. 47, 10515d. CXXVIII. Polycyclic compounds. 2°. Action of primary aromatic amines and 2-aminopyridine on vinyl silyl ketenes. Synthesis of aryl substituted 4-piperidone and 1-(2-pyridyl)-4-piperidone. I. N. Nazarov, S. G. Matsovia, and V. A. Kuchina. *Ibid.* 923-32.—See C.A. 47, 5306c. CXXIX. Polycyclic compounds. 3°. Transformations of 1-phenyl-2,3-dimethyl-4-piperidone. *Ibid.* 928.—See C.A. 48, 1506a. H. J. H.

1. I. N. NAZAROV, S. G. MATSOYAN, V. A. RUDENKO
2. USSR (600)
4. Amines
7. Acetylene derivatives. Part 128. Heterocyclic compounds. No. 23. Action of primary aromatic amines and of aminopyridine on vinyl allyl ketones. Synthesis of aryl substituted piperidones and 1 (pyridyl) 4 piperidones. Izv. AN SSSR. Otd. khim, nauk no. 6. 1952.
9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

1. NAZAROV, I. N.; MATSOYAN, S. G.; PUDENKO, V. A.
2. USSR 600
4. Piperidone
7. Acetylene derivatives. Part 129. Heterocyclic compounds. No. 24. Transformations of 1-phenyl-2, 5-dimethyl-4-piperidone, Izv. AN SSSR. Otd. khim. nauk, No. 6, 1952.
9. Monthly List of Russian Accessions, Library of Congress, April, 1953, Uncl.

NAZAROV, I.N.; MATSOYAN, S.G.; HUIENKO, V.A.

Acetylene derivatives. Part 148. Heterocyclic compounds. No. 25. Synthesis of secondary and tertiary 1-phenyl-2,5-dimethyl-4-piperidols and their esters. Izv. AN SSSR, Otd.khim.nauk. no.2:303-313 Mr-Ap '53.

(MLBA 6:5)

1. Institut organicheskoy khimii Akademii nauk SSSR.

(Heterocyclic compounds)

"APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R032932920003-8



APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R032932920003-8"

NAZAROV, I.N.; MATSOYAN, S.G.; VARTANYAN, S.A.

~~SECRET~~
Acetylene derivatives. Part 164. Action of primary and secondary
amines on tetrahydro-4-pyrones. Zhmr.ob.khim.23 no.12:1990-1994
D '53. (MLRA 7:2)

1. Institut organicheskoy khimii Akademii nauk SSSR,
(Pyrones) (Amines)

MATSOYAN, S.G.; VARTANYAN, S.A.

Transformations of methyl- β -alkoxyethylketones. Izv. AN Arm. SSR. Ser.
FIZMATH nauk 8 no.2:31-36 M-Ap '55. (MIRA 8:7)

1. Khimicheskiy institut Akademii nauk Armyanskoy SSR.
(Ketones)

NAZAROV, I.N.; VORTANYAN, S.A.; MATSOYAN, S.G.

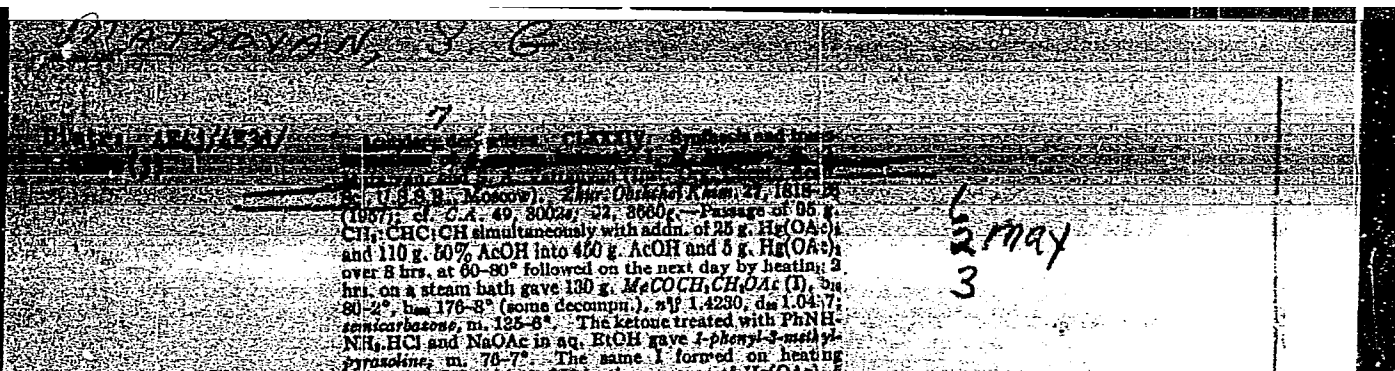
Acetylene derivatives. 169. Hydration of vinylacetylene hydrocarbons
in alcohol and phenol solutions. Zhur.ob.khim.25 no.6:1111-1117 Je
'55. (MLRA 8:12)

1. Khimicheskiy institut Akademii nauk Arayanskoy SSR.
(Acetylene compounds)

10 7 5 0 - A 10 5 6
VARTANYAN, S.A.; MATSOYAN, S.G.; MUSAKHANYAN, G.A.

Isomerisation of 1-dialkylamine-2, 4 diene systems. Izv. AN Arm.
SSR. Ser. FIZMATH Nauk 9 no.10:29-35 '56. (MIRA 10:4)

1. Khimicheskiy institut AN Arayanskoy SSR.
(Isomerisation)



Thermone gave 1-acetylcyclohexylidene, identical
with the above. Refluxing $\text{MgC}_2\text{H}_5\text{COCH}_3/\text{CH}_3\text{COOH}$
in the presence of AcONa 6 hrs. gave 95% of the same
ketone; use of $\text{Hg}(\text{OAc})_2$ catalyst gave the same result.
Hydrogenation of IV over Pt gave 1-acetylcyclohexylidene.

ketone, use of H_2OAc catalyst gave the same result. Hydrogenation of IV over Pt gave 2-methyl-2-pentanol, bp 90-2°, d_4^{20} 0.8110, n_D^{20} 1.3787, which heated with aq. $NaCl$ 4 hrs. at 70° gave a low yield of $MeC(CH_2CH_2)_3CH_3$, bp 43-5°, and a similar yield of 4-methyl-1-hexanol, bp 90-101°, d_4^{20} 0.8157, n_D^{20} 1.4710, 0.0006, which heated with 10% H_2SO_4 4 hrs. at 95° gave 76% 2,2-dimethyltetrahydro-4-pyran. Heating II with 10% H_2SO_4 at 60-70° until the oil layer had gone into solution gave 40% 2-methyltetrahydro-4-pyran, bp 50-51°, d_4^{20} 0.8145, n_D^{20} 1.4622, in 100% yield. Similar treatment of IV gave 1,2-dimethyltetrahydro-4-pyran, bp 50-51°, d_4^{20} 0.8145, n_D^{20} 1.4622, in 100% yield. Treatment of 1,6-dichloro-5-hexanone gave a low yield of 2-methyltetrahydro-4-pyran. Refining 5 g. $MeCOCH_2CH_2OAc$ with 20 g. $MeOH$ and 2 drops H_2SO_4 for 1 hr. gave neutralization, 3 g. $MeCOCH_2CH_2OH$. Similar treatment of IV but in $EtOH$ gave 2-methyl-2-pentanol, bp 84-85°, d_4^{20} 0.8145, n_D^{20} 1.4622, in 100% yield. Similarly, $FeOCH_2CH_2OAc$ gave $FeOCH_2CH_2OH$, bp 70-71°, d_4^{20} 0.8140, n_D^{20} 1.4622, in 100% yield. The but $FeOCH_2CH_2OAc$ gave

moderate yield of $\text{MeCOCH}_2\text{CH}_2\text{NM}$. Similarly, R_2O
 $\text{CH}_2\text{CH}_2\text{OAc}$ gave $\text{EtOCH}_2\text{CH}_2\text{NM}$, bp 70-72°/1.3 mm
0.8043 (picric, m, 104-5°). $\text{iso-BuCOCH}_2\text{CH}_2\text{OAc}$ gave
 $\text{iso-BuCOCH}_2\text{CH}_2\text{NM}$, bp 70-72°/1.3 mm (picric, m, 60-
101°). IV gave $\text{EtOCH}_2\text{CH}_2\text{NM}$ (bp 70-72°/1.3 mm) and
85-8°/1.4 mm (picric, m, 100-3°). II with aq. MeNH_2 gave a
low yield of 1-methyl-4-piperidone, bp 81-82°/1.4 mm (picric,
m, 163-4°). G. M. Kradapoff

VZAV

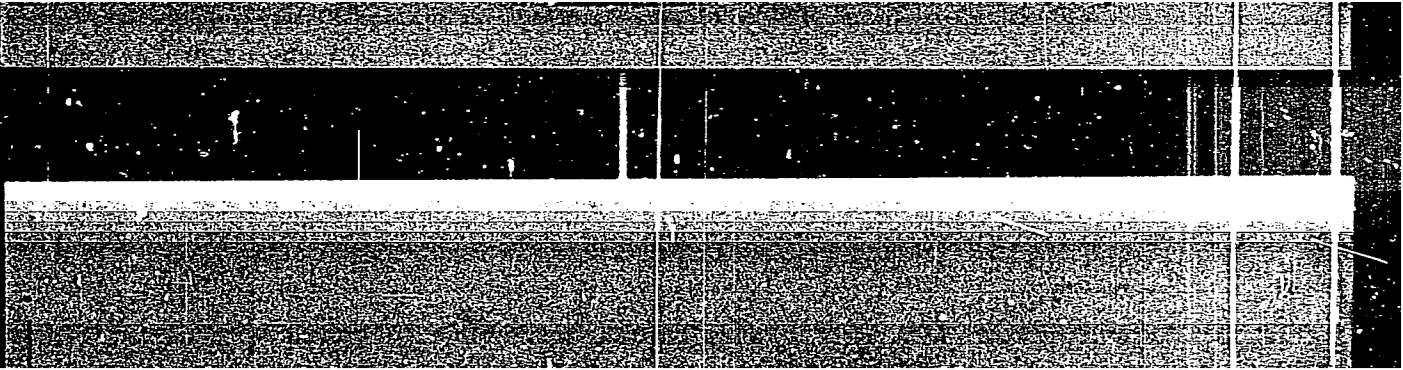
MATSOVANY, S.G.

Distr: 4E43/4E3d/4E2e(1)

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CIA-RDP86-00513R032932920003-8



APPROVED FOR RELEASE: 06/14/2000

CIA-RDP86-00513R032932920003-8"

NAZAROV, I.N.; MATSOYAN, S.G.

Acetylene derivatives. Part 186: Hydration of tertiary vinyl-ethynylcarbinol acetates. Synthesis and conversion of unsaturated α -acetoxyketones. Zhur. ob. khim. 27 no.8:2128-2133 Ag '57.

(MLRA 10:9)

1. Institut organicheskoy khimii Akademii nauk SSSR i Khimicheskiy institut Akademii Argyanskoy SSR.

(Vinyl compounds) (Ketones)

MAISOYAN, S. G.

AUTHORS: Nazarev, I. N. (D. Sc.) and Maisoyan, S. G. 7-11-56

TITLE: Derivatives of Acetylone. 100. Ring Formation of α , β -Unsaturated α -Ketoalcohols and β -Keto-1,4-Diols in the Form of Tetrahydro-3-Furfurones (Previously, *Ussetskaya*, 1956. Title: *Ussetskaya* - *predelnykh α -ketos, interval β -keto-1,4-diolov v tetrahydro-3-furfurony*).

PERIODICAL: Zhurnal Obshchey Khimii, 1956, Vol. 27, No. 11, pp. 1951-1961 (USSR)

ABSTRACT: In earlier papers the authors described the nature of the production of all kinds of unsaturated α -keto alcohols by means of hydrogenation of the acetals of vinylacetylene derivatives and the dicarboxates of acetylone- γ -alcohols with direct or indirect saponification of the unsaturated α -ketolcohols. The aliphatic unsaturated α -ketoalcohols were hitherto not investigated. In contrast to the β -ketoalcohols they yield no cyclic compounds on action of diluted acids, but under addition of water on the double bond they form α , β -ketodials which by dehydration agents are again converted into cyclic compounds. The process of the hydrogenation of the double bond with 10-15% sulfuric acid does not lead to any ring formation, but this may be attained with mercury salts as catalyst, under tetrahydrofuran as solvent. This ring formation is still more easily attained under the same

Card 1/2

Derivatives of Acetyl Co. 150. ¹H-NMR spectrum of the dimerization. 73-11-2/56
 α -Ketonealcohols and 2-keto-1,4-dicarb in the form of Tetrahydro-3-pyridine.

conditions with the α, β' -ketonealcohols. Thus the α, β' -ketonealcohols are
 saturated α -ketonealcohols with dilute sulfuric acid without
 mercury catalyst. Not yield any tetrahydro-3-pyridine, only
 2-keto-1,4-dicarb. But the unsaturated α -ketonealcohols or 2-keto-
 -1,4-dicarb with dilute sulfuric acid in the presence of H_2SO_4
 form the dimerization in tetrahydro-3-pyridine. (Table 1, 2)
 (Table 1, 2). There are 1 table, 6 references, 5 figures and 1 figure.

ASSOCIATION: Institute of Organic Chemistry, Academy of Sciences of the USSR and Institute
 Academy of Sciences of the USSR (Institute of Organic Chemistry, Academy of Sciences of the USSR and
 Khimicheskii Institut Akademii Nauk SSSR).

SUBMITTED: October 15, 1976

AVAILABLE: Library of Congress

1. Acetylene derivatives 2. Cyclic compounds-Production

Card 2/2

MATSOYAN, S. G.

AUTHOR:

Nazarov, I. K. (Deceased). Matsoyan, S. G.
Vartanyan, S. A., Zhuravitskiy, V. A.

72-11-10/56

TITLE:

Derivatives of Acetylene (Proizvodnyye aketilena).
189. Synthesis and Conversions of 3-Vinyl-2-methyltetrahydrofuran-
-3-ols (189. Sintez i prevrashcheniya 3-viniletinitetragidrofuran-3-olov).

PERIODICAL:

Zhurnal Obshchey Khimii, 1957, Vol. 27, No. 11, pp. 2961-2969 (USSR)

ABSTRACT:

The authors succeeded in bringing about the synthesis of 3-vinyl-
-ethylnitetrahydrofuranols-3- with a yield of 90% by the action
of magnesium bromovinylnitetylene upon tetrahydrofuran-3-ol.
In this manner they obtained 3-vinylethylnitetrahydrofuranols
-3- which formed the corresponding 3-butyltetrahydrofuranols
-3- on hydrogenation with a Pt - catalyst after taking up 3 mol.
hydrogen. On heating the 3-butyltetrahydrofuranols in the
presence of acid gave rise to the 3-vinylethylnitetrahydrofuranols
as well as other vinyltetrahydrofuranols (yield 40% (C₈H₁₄O)).
In the distillation over potassium bisulfate they are dehydrated
and yield the corresponding acetylenes. On hydrogenation in al-
cohol solutions in the presence of a platinum catalyst these acety-
lenes take up four mols. of hydrogen and form the correspond-
ing 3-butyltetrahydrofuranols. Thus quite a number of 3-

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Derivatives of 3-vinyl-2,5-dihydrofuran-3-ols
3-Vinylethynyltetrahydrofuran-3-ols

72-11-16/56

vinylethynyltetrahydrofuran-3-ols - 3 - was synthesized and some of their conversions were investigated (as by isomerization, dehydration, oxidation of the corresponding acetylene derivatives and hydrogenation). There are 3 references, 2 of which are Slavic.

ASSOCIATION: Institute of Organic Chemistry, AN USSR Acad. N. D. Zelinskiy and Chemical Institute AN Armenian SSR (Institut organicheskoy Khimii i Khimii N. D. Zelinskogo Akademii Nauk SSSR i Khimicheskij institut Akademii Nauk Armjanskoy SSR).

SUBMITTED: October 15, 1956

AVAILABLE: Library of Congress

1. Acetylene derivatives
2. 3-Vinylethynyltetrahydrofuran-3-ols-Synthesis

Card 2/2

AUTHORS: Nazarov, I. N., (deceased), Vartanyan, S.A., SOV/79-28-10-26/60
Matsoyan, S. G.

TITLE: Derivatives of Acetylene (Proizvodnyye atsetilena) CXClV.
Hydration of Divinyl Acetylene and Vinyl Isopropenyl
Acetylene in Alcohol Solutions (CXClV. Gidratatsiya
divinilatsetilena i vinilizopropenilatsetilena v spirtovykh
rastvorakh)

PERIODICAL: Zhurnal obshchey khimii, 1958, Vol 28, Nr 10, pp 2757-2766
(USSR)

ABSTRACT: Nazarov and his collaborators have demonstrated several
times that the divinyl acetylenes easily hydrate and form
dienes on their heating in aqueous methanol solution in the
presence of sulfuric acid and mercury sulfate. The divinyl
acetylene and the symmetrical dienes are the most difficult
ones to hydrate. The dienes formed accumulate methanol
under certain conditions of reaction and are transformed into
 β -methoxy ketones (Scheme 1). It was only a natural
consequence to carry out this hydration also in other alcohols
in order to obtain different β -alkoxy ketones. It turned out
that, depending on the conditions of the reaction, these

Card 1/3

Derivatives of Acetylene. CXCV. Hydration of SOV/79-28-10-26/60
Divinyl Acetylene and Vinyl Isopropenyl Acetylene in Alcohol Solutions

ketones, as well as tetrahydro- γ -pyrones, are formed. In the case of a ramification and a higher molecular weight the velocity of hydration is slowed down. Divinyl acetylene and vinyl isopropenyl acetylene thus are hydratized to the corresponding dienones on their heating in aqueous ethanol, butanol, and isopropenyl alcohol in the presence of mercury sulfate and sulfuric acid. The divinyl acetylene yields the vinyl propenyl ketone and the vinyl isopropenyl acetylene yields the propenyl isopropenyl ketone. The dienes formed affiliate one or two alcohol molecules, depending, on the conditions of the reaction, and are transformed into β -alkoxy ketones. 2-methyl-tetrahydro-4-pyrone (50% yield) is formed as the only reaction product of the hydration of divinyl acetylene in 50% methyl and ethyl alcohol. The alkoxy group arranges itself always in the β -position to the carbonyl group in the affiliation of the alcohols to the dienes. All synthesized β -alkoxy ketones react with primary and secondary amines under the formation of 4-piperidones or β -amino ketones. There are 6 references, 6 of which are Soviet.

Card 2/3

Derivatives of Acetylene. CXCV. Hydration of Divinyl SOV/79-28-10-26/60
Acetylene and Vinyl Isopropenyl Acetylene in Alcohol Solutions

ASSOCIATION: Khimicheskii institut Akademii nauk Armyanskoy SSR
(Chemical Institute of the Academy of Sciences Armyanskaya
SSR)

SUBMITTED: October 15, 1957

Card 3/3

SOV/79-29-2-21/71

AUTHORS: Matsuyan, S G, Chukhadzhyan, G. A., Vartanyan, S A.

TITLE: Chemistry of Vinyl Acetylene (Khimiya vinilatsetilena). XI On the Mechanism and the Direction of the Hydration of Vinyl Ethynyl Carbinol Ether (XI O mekhanizme i napravlenosti gidratatsii efirov viniletinilkarbinolov)

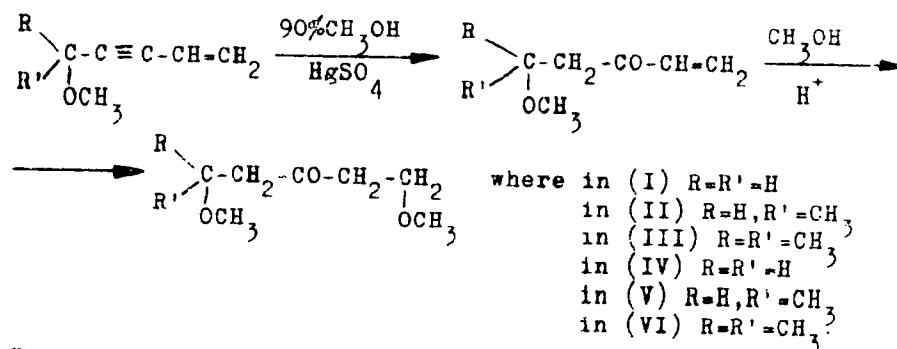
PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 2, pp 451-457 (USSR)

ABSTRACT: In follow-up to an earlier paper by Nazarov and Matsuyan, the authors continued the hydration of vinyl ethynyl carbinol ether in acetic acid solutions with a view to clarifying the affiliation arrangements of the water elements to the triple bond. It was found that the ethers of vinyl ethynyl carbinols, unlike their esters, are smoothly transformed into β -keto derivatives in alcohol solutions in the presence of HgSO_4 . Thus, for example, on heating the methyl ethers of vinyl ethynyl carbinol (I), methyl vinyl ethynyl carbinol (II) and dimethyl vinyl ethynyl carbinol (III) with 90% methanol in the presence of HgSO_4 , the corresponding β -methoxy ketones (IV)-(VI) are formed according to the scheme

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Chemistry of Vinyl Acetylene. XI. On the Mechanism and the Direction of the Hydration of Vinyl Ethynyl Carbinol Ether

SOV/79-29-2 2*/71



It was thus shown that on the hydration of the vinyl ethynyl carbinol ethers under above conditions the affiliation of water to the triple bond takes place in the direction of the formation of β -keto derivatives. Hydration of both acetate and ether of methyl ethyl carbinol under above conditions was found to proceed in one direction with the formation of the β -keto derivative. It was shown that the acetate of vinyl ethynyl carbinol,

Card 2/3

Chemistry of Vinyl Acetylene. XI. On the Mechanism and the Direction of the
Hydration of Vinyl Ethynyl Carbinol Ether

SOV/79-29-2-2/77

like the other acetates of the secondary and tertiary vinyl ethynyl carbinols is hydrated in the direction to the α -keto derivatives. It is attempted to make the above hydration direction of the ethers of vinyl ethynyl and methyl ethynyl carbinols dependent on the electrophilic affiliation arrangement of the sulfuric acid mercury (of the water elements) to the triple bond. There are 17 references 15 of which are Soviet

ASSOCIATION: Khimicheskiy institut Akademii nauk Armyanskoy SSR (Chemical Institute of the Academy of Sciences, Armyanskaya SSR)

SUBMITTED: December 7, 1957

Card 3/3

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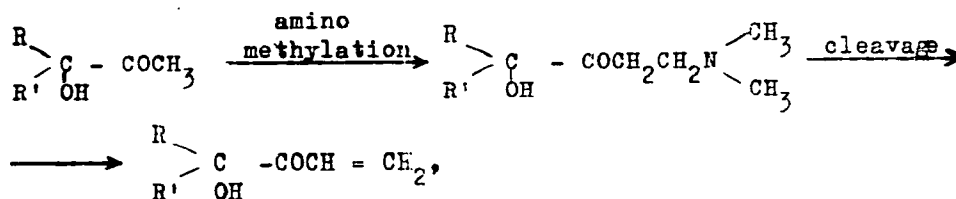
SOV/79-29-3-9/61

AUTHORS: Nazarov, I. N. (Deceased), Matsoyan, S. G., Vartanyan, S. A.

TITLE: Synthesis and Transformations of Vinyl- α -Keto Alcohols
(Sintez i pfevrashcheniya vinil- α -ketospirtov)

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 3, pp 778-783 (USSR)

ABSTRACT: Unsaturated α -keto alcohols are highly active owing to their functional groups and a double bond. In the work under review the authors carried out the synthesis of the vinyl- α -keto alcohols for the purpose of further investigating the properties and transformations of the unsaturated α -keto alcohols (Ref 1). The synthesis of the unsaturated α -keto alcohols with a non-substituted vinyl group was carried out according to the following scheme; proceeding from the tertiary acetyl carbinols:



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SOV/79-29-3-9/'61

Synthesis and Transformations of Vinyl- α -Keto Alcohols

- | | |
|--|---|
| where (I) $R=R'=\text{CH}_3$ | (IV) $R=R'=\text{CH}_3$, |
| (II) $R=\text{CH}_3$, $R'=\text{C}_2\text{H}_5$ | (V) $R=\text{CH}_3$, $R'=\text{C}_2\text{H}_5$ |
| (III) $R,R'=(\text{CH}_2)_5$ | (VI) $R,R'=(\text{CH}_2)_5$. |

The reaction according to Mannich with the tertiary acetyl carbinols proceeded in the normal way and resulted in a yield of 70% of β -amino- α -keto alcohols, thus, for example, the compounds (I), (II) and (III) were obtained, which readily passed to the ester. Such esters may be of pharmacological importance and may serve as sources for the synthesis of physiologically active products. At 140-200° the iodine ethylates or hydrochlorides of the amino keto alcohols (I), (II) and (III) are transformed in vacuum into the corresponding vinyl- α -keto alcohols (IV), (V) and (VI). These are colorless, strong smelling, lacrimatory liquids. Unlike α -keto alcohols with a substituted vinyl group, they polymerize already at room temperature into a gelatin and then pass over to a glassy mass. On hydrogenating over a Pt-catalyst, vinyl keto alcohols absorb one mol hydrogen and form the corresponding saturated α -keto alcohols (VII), (VIII) and (IX). They affiliate water, alcohols and amines under formation of

Card 2/3

SOV/79-29-3-9/61

Synthesis and Transformations of Vinyl- α -Keto Alcohols

β -functional-substituted α -oxyketones; thus, for example, compound (IV) passes over to keto diol (X), (V) and (VI) into (XI) and (XII). Ketone (XIII) forms in the acetylation of (IV). There are 3 references, 2 of which are Soviet.

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Armyanskoy SSR
(Institute of Organic Chemistry of the Academy of Sciences,
Armyanskaya SSR)

SUBMITTED: January 27, 1958

Card 3/3

807/4982

International symposium on macromolecular chemistry, Moscow, 1960.

Nechemicheskoye slovo po makromolekulyarnoy khimii SSSR, Moscow, 14-18 Iyulya 1960 g.; doklady i referaty. Sbornik I. (International Symposium on Macromolecular Chemistry held in Moscow, June 14-18, 1960; Papers and Summaries. Section I.) [Moscow, Izd-vo AN SSSR, 1960] 346 p. 5,500 copies printed.

Sponsoring Agency: The International Union of Pure and Applied Chemistry, Commission on Macromolecular Chemistry

Trans. No.: T. V. Polyakova.

PURPOSE: This collection of articles is intended for chemists and researchers interested in macromolecular chemistry.

COMMENTS: This is Section I of a multivolume work containing scientific papers on macromolecular chemistry in Moscow. The material includes data on the synthesis and properties of polymers, and on the processes of polymerization, copolymerization, polycondensation, and polyrecombination. Each part is presented in full or summarized in French, English, and Russian. There are 47 papers, 28 of which were presented by Soviet, Rumanian, Hungarian, and Czechoslovakian scientists. No personalities are mentioned. References accompany individual articles.

Nikolova, Ya. I., B. A. Dolgoplosk, I. G. Zhuravskaya, R. A. Korotkikh, and I. L. Kuznetsov (USSR). The Synthesis of Cis- and Trans-Diene Polymers on Oxide Catalysts and a Study of Their Structure and Properties 13

Kozlov, V. A., G. V. Iordani, Yu. M. Filipovskaya (USSR). Synthesis and Polymerization of Substituted Polystyrenes 47

Rodiansky, M. J., M. A. Krasova, A. Staruchuk, and V. Zvonar (Czechoslovakia). The Structure of Hardened Unsaturated Polyester 48

Kil'burgan, Ya. M., A. Ye. Kulikova, and M. M. Imshinikova (USSR). New Method of Preparation of Polyesters and Their Oligomers 64

Kobasov, M., and I. Sternachuk (Czechoslovakia). Analysis of Cross-Linked Polymers 72

Kuznetsov, I. A., M. V. Kuznetsov, M. G. Kuznetsov, L. V. Kuznetsov, and G. A. Kuznetsov (USSR). On the Synthesis and Properties of Graft-like Polymers of the Type of Poly-p-Styrene and Polyvinylacetate 90

Kuznetsov, I. A. (USSR). Graft Polymerization and Copolymerization of Polystyrene 101

Kuznetsov, I. A., A. I. Pavlov, A. V. Torgilov, and B. A. Kravtsov (USSR). Synthesis of Crystalline Polyvinylpyrrolidone 118

Arbuzova, I. A., and Ye. M. Rostomskiy (USSR). Polymerization of Polyfunctional Compounds 123

Kuznetsov, I. A., N. Dzhoniy, E. Jibrilov, and M. Zinabov (Rumania). Polymerization of Vinylpyrrolidone in the Presence of Butyllithium and Titanium Chloride Type Catalysts 131

Kuznetsov, I. A., N. Dzhoniy, and P. P. Alibekova (USSR). On the Preparation of the New Type of Linear Polymers by the Reaction of Polymerization 141

Kuznetsov, I. A., A. V. Torgilov, and S. G. Duryagin (USSR). The Synthesis of Organosilicon Polymers on a Complex Catalyst (C_2H_5)₃Al- $AlCl_3$ 151

Kozlov, V. A., S. L. Davydova, and M. V. Kuznetsov (USSR). Germanium-Containing Polymers 156

Kozlov, V. A., S. L. Davydova, V. M. Kozlov, D. A. Kozlov, and V. V. Kozlov (USSR). L. V. Lysa, A. I. Kozlov, and V. V. Kozlov (USSR). Organotin Polymers 160

Kozlov, V. A., L. M. Kiseleva, and P. S. Florinskaya (USSR). The Effect of Chemical Structure on the Polymerization Activity of the Unsaturated Organometallic Compounds 167

Kozlov, V. A., N. V. (USSR). Cooperative Processes in the Polycondensation of Biopolymers 201

Card 4/9

49

MATSOYAN, S.G.; AVETIAN, M.G.; VOSKANYAN, M.G.

Cyclic polymerisation of divinyl acetal and vinyl monomers. Vysokom.
seed. 2 no.2:314 P '60. (MIRA 13:11)
(Polymerisation) (Vinyl compounds)

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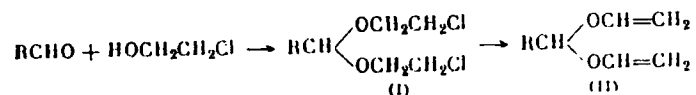
77,23
SOV/79-30-2-74/13

AUTHORS: Matsoyan, S. G., Avetyan, M. G.

TITLE: Letters to the Editor. Synthesis and Cyclic Polymerization of Divinyl Acetals

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol 30, Nr 2, pp 697-698 (USSR)

ABSTRACT: Acetalation of aldehydes with ethylene chlorohydrin yields β , β -dichloroethyl acetals (I) which can be converted into divinyl acetals (II) by dehydrochlorination. The general course of the reactions is:



Dehydrochlorination of β , β -dichlorodiethoxymethane (I, R = H), in the presence of potassium hydroxide yields divinyl formal (II, R=H), bp

Card 1/3

Letters to the Editor. Synthesis and
Cyclic Polymerization of Divinyl Acetals

77923

SOV/79-30-2-74/75

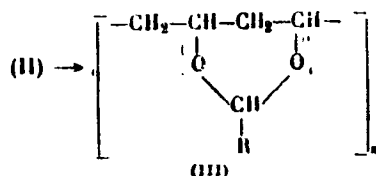
88-90° (680 mm), n_D^{20} 1.4215. Divinyl butyral
(II, R=n-C₃H₇), bp 44-45° (13 mm), 138-139° (680 mm),
 n_D^{20} 1.4250, was obtained in the analogous way. In
addition, a few other divinyl acetals (II, R=CH₃,
C₂H₅, iso-C₃H₇, iso-C₄H₉, C₆H₅) were synthesized.
They are colorless liquids with ether odor. The
structure of divinyl acetals was confirmed by
hydrolysis and hydrogenation. Cyclic poly-
merization of divinyl acetals takes place when the
latter are polymerized in the presence of such
initiators as benzoyl peroxide, azoisobutyronitrile,
and yields polyvinyl acetals (III). Cyclic
polymerization of divinyl acetal yields poly(divinyl
acetal) (III, R=H), mp 85-120°, white powder. All
polydivinyl acetals are soluble in the majority
of organic solvents except methyl and ethyl al-
cohols. They cannot be hydrogenated and do not add
bromine. Hydrolysis of the obtained polydivinyl

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Letters to the Editor. Synthesis and
Cyclic Polymerization of Divinyl Acetals

77925

SOV/79-50-2-74/78



acetals yields poly (vinyl alcohol), the *B*-glycol structure of which was confirmed by oxidation with nitric acid to oxalic acid. There are 4 references, 2 U.S., 1 German, 1 Soviet. The U.S. references are: Butler, G. G., Angelo, R. I., J. Am. Chem. Soc., 79, 3128 (1957); Marvel, C. S., Stille, I. K., J. Am. Chem. Soc., 80, 1740 (1958).
ASSOCIATION: Institute of Organic Chemistry of the Academy of Sciences of Armenian SSR (Institut organicheskoy khimii Akademii nauk Armyanskoy SSR)

SUBMITTED:
Card 3/3

October 16, 1959

S/C79/60/030/04/33/080
B001/B016

AUTHORS: Matsuyan, S. G., Chukhadzhyan, G. A., Vartanyan, S. A.

TITLE: Reaction of Acetylene Carbinols With Acetic Acid in the Presence of Mercuric Acetate, and the Formation Mechanism of Acetoxy Ketones ↑

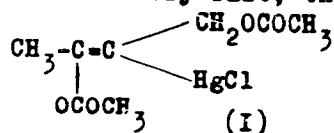
PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 4, pp. 1202-1207

TEXT: In continuation of the papers by I. N. Nazarov (Ref. 1) and G. F. Hennion (Ref. 2) dealing with the synthesis of acetyl carbinol acetates, the authors of the present paper performed a more convenient synthesis of acetoxy ketones by boiling the acetic acid solutions of acetylene alcohols in the presence of mercuric acetate, with subsequent fractionation of the reaction mixture. The corresponding acetates of the tertiary acetyl carbinols thus resulted from dimethyl-, methyl-ethyl-, methyl-isopropyl-, diisopropyl-, methyl-phenyl-ethynyl carbinol as well as from 1-ethynyl-cyclohexanol-1. By heating the disubstituted butin-2-ol-1 with glacial acetic acid in the presence of mercuric acetate, methyl-β-acetoxy-ethyl ketone is formed. On reaction of the acetate of butin-2-ol-1

Card 1/3

Reaction of Acetylene Carbinols With Acetic Acid S/079/60/030/04/33/080
in the Presence of Mercuric Acetate, and the B001/B016
Formation Mechanism of Acetoxy Ketones

with mercury salt, the addition product (I) was separated:



Scheme 1 illustrates the mechanism of this reaction which is confirmed by schemes 2 and 3. Methyl-β-acetoxy-ethyl ketone (V) is obtained, in this connection, as end product. The formation mechanism of the acetates of acetyl carbinols from monosubstituted acetylene alcohols on reaction with acetic acid in the presence of mercuric acetate may be illustrated in steps by scheme 5. All resultant α-acetoxy ketones were hydrolyzed by aqueous alcoholic alkali lye to give the corresponding α-keto alcohols (Table). There are 1 table and 10 references 6 of which are Soviet.

Card 2/3

Reaction of Acetylene Carbinols With Acetic
Acid in the Presence of Mercuric Acetate, and
the Formation Mechanism of Acetoxy Ketones

S/079/60/030/04/33/080
B001/B016

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Armyanskoy SSR
(Institute of Organic Chemistry of the Academy of Sciences,
Armyanskaya SSR)

SUBMITTED: April 20, 1959

Card 3/3

85611

53851 2203 10 1153

S/079/60/030/007/039/039/XX
B001/B066

AUTHORS: Matsoyan, S. G. and Avetyan, M. G.

TITLE: Polymerization of Substituted Divinyl Ketones Under the
Formation of Rings

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 7, pp. 2431-2432

TEXT: The authors applied a new method of polymerization which consists of an intramolecular ring closure of isolated dienes (Ref. 1) and of a simultaneous intermolecular chain lengthening to substituted divinyl ketones. Synthesis and different conversions of these dienes, especially in cyclopentenone, were studied by I. N. Nazarov and co-workers (Ref. 2). On polymerization of 2-methyl-1,4-hexadien-3-one (I) in the presence of 1 mole% of benzoyl peroxide, a white, powdery polymer (II) resulted which melts at 145-150° and is well soluble in organic solvents. By ozonization and bromination about 25% of unsaturated bonds were found in the polymer (II) referred to two double bonds of the monomer (100%). Hydrolysis of the ozonide of the polymer gives acetic acid and a polyacid which is partly soluble in water. Titration of the polyacid with 0.5 N lye revealed that

Card 1/2

85614

Polymerization of Substituted Divinyl Ketones S/079/60/030/007/039/039/XX
Under the Formation of Rings B001/B066

the polymeric member consists of two molecules of monomer (I). Apparently, a cyclopolymerization of one molecule and a vinyl polymerization on the isopropenyl group of the second molecule of monomer (I) take place simultaneously. Such a polymerization mechanism can be explained by the fact that the cyclopentane rings are sterically hindered to form a polymeric chain directly. In the infrared spectrum of polymer (II) there is an intense band of the carbonyl group of the cyclopentane ring, as well as frequencies of the conjugate double bond and the carbonyl group. By comparing ultrared spectra of monomer (I) with those of polymer (II) the percentage of unsaturated bonds was determined, which decreases to about a quarter in polymer (II). There are 2 references: 1 Soviet and 1 US. ✓

ASSOCIATION: Institut organicheskoy khimii Akademii nauk Armyanskoy SSR
(Institute of Organic Chemistry of the Academy of Sciences
Armyanskaya SSR)

SUBMITTED: March 15, 1960

Card 2/2

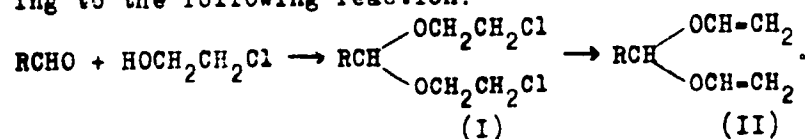
S/190/61/003/004/007/014
B101/B207

AUTHORS: Matsuyan, S. G., Avetyan, M. G., Voskanyan, M. G.

TITLE: Study in the field of cyclic polymerization and copolymerization. III. Synthesis and cyclic polymerization of aliphatic divinyl acetals. A new method of producing polyvinyl acetals

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 3, no. 4, 1961, 562-569

TEXT: The present paper describes the synthesis and polymerization of divinyl formal (DVF), divinyl ethanal (DVE), and divinyl butyral (DVB) according to the following reaction:



The following data are given for the synthesis: 1) β, β' -dichloro diethyl formal: 161 g ethylene chlorohydrin, 3 g HCl, 35 g paraform, 250 ml benzene

Card 1/5

S/190/61/003/004/007/014
B101/B207

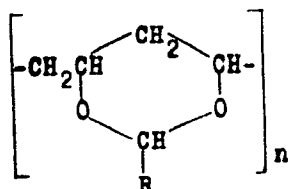
Study in ...

are heated to 100-110°C, the water forming is azeotropically distilled with benzene; yield: 94.8%. 2) DVF: 53.3 g β,β' -dichloro diethyl formal are dropwise added in the course of six hr to 85 g granulated KOH at 180-200°C. The reaction product is distilled off with the water which had developed, saturated with potash, and DVF extracted by means of ether; yield: 41%. 3) β,β' -dichloro diethyl ethanal: a) from paraldehyde analogue to 1); yield: 62%; b) from acetaldehyde: 75 g acetaldehyde are added to 161 g ethylene chlorohydrin and 5 g HCl and left standing for three days, subsequently treated with potash and distilled off; yield: 35%; c) from acetylene: 40.2 g ethylene chlorohydrin, 2 g mercury sulfate and 1 g tri-chloro acetic acid are heated to 60-90°C and acetylene bubbled through the solution for five hr. Treatment with potash is followed by distillation, yield 25%. DVE and DVB were synthesized in an analogous manner. The structure of these compounds was proven by hydrogenation on platinum (formation of the respective diethyl acetal). DVF, DVE, and DVB polymerization by means of the catalysts SnCl_4 , FeCl_3 , AlCl_3 , led to insoluble three-dimensional polymers. Polymerization in the presence of benzoyl peroxide (BP) or azoisobutyric acid dinitrile (AIBD) led to cyclic derivatives:

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S/190/61/003/004/007/014
B101/B207

Study in ...



. The rate of cyclic polymerisation was found to be

proportional to the square root of initiator concentration. Fig. 2 shows the poly-DVB yield as a function of temperature under application of BP and AIBD, Fig. 3, the yield as a function of the reaction time for DVF, DVE, and DVB. Analysis of the polymers proved 99.1-99.8% acetylation. Moreover, the infrared spectra of the polymers recorded by A. V. Mushegyan did not show the 1630-1640 cm^{-1} band which is characteristic of the vinyl group. (Commercial polyvinyl butyral is acetylated only to 76.5%). Hydrolysis of the polymers yielded quantitatively polyvinyl alcohol forming polyvinyl acetate with acetic anhydride, commercial polyvinyl acetals containing free OH groups, with aliphatic aldehydes. The presence of the 1,3-dioxane groups in polydivinyl acetals was confirmed by the β -glycol structure of polyvinyl alcohol which, when oxidized, gave oxalic acid. The vitrification temperature of the following compounds was found: poly-DVF = 74°C, poly-DVE = 69°C, poly-Card 3/5

S/190/61/003/004/007/014
B101/B207

Study in ...

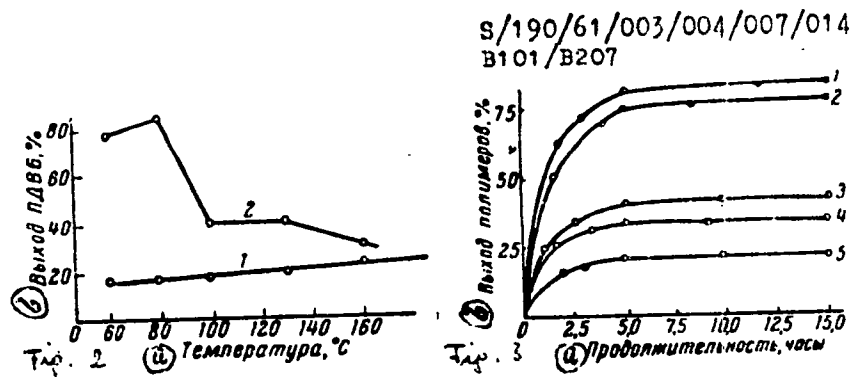
DVB = 24°C. The molecular weight of poly-DVE, which was ebullioscopically determined in benzene, amounted to approximately 10,000. The intrinsic viscosity (determined in benzene at 20°C) was between 0.10-0.15. Polydivinyl acetals, obtained by simultaneous initiation with AIBD and ultraviolet light of an CBAW-200 (SVDSH-200) lamp had a higher intrinsic viscosity. There are 6 figures, 1 table, and 9 references: 4 Soviet-bloc and 5 non-Soviet-bloc. The 2 references to English-language publications read as follows: C. B. Butler, R. J. Angelo, J. Amer. Chem. Soc., 79, 3128, 1957; C. S. Marvel et al., J. Amer. Chem. Soc., 79, 5771, 1957; 80, 1740, 1958.

ASSOCIATION: Institut organicheskoy khimii AN Armyanskoy SSR (Institute of Organic Chemistry, AS Armyanskaya SSR)

SUBMITTED: July 12, 1960

Card 4/5

Study in ...



Card 5/5

MATSOYAN, S.G.; AVETIAN, M.G.; AKOPYAN, L.M.; VOSKANYAN, M.G.; MORLYAN, N.M.;
ELIAZIAN, M.A.

Cyclic polymerization and copolymerization. Part 4: Synthesis
and study of the cyclic polymerization of some divinylacetals and
diisopropenylacetals. Vysokom.sped. 3 no.7:1010-1014 J1 '61.
(MIRA 14:6)

1. Institut organicheskoy khimii AN Armyanskoy SSR.
(Acetals) (Polymerization)

MATSOYAN, S.G.; AVETYAN, M.G.; VOSKANYAN, M.G.

Cyclic polymerization and copolymerization. Part 5: Cyclic
copolymerization of divinyl acetals with vinyl acetate. *Vysokor.*
soed. 3 no.8:1140-1143 Ag '61. (MIRA 14:9)

1. Institut organicheskiy khimii AN Armyanskoy SSR.
(Vinyl compound polymers) (Vinyl acetate polymers)

MATSOYAN, S.G.; AKOPYAN, L.M.

Cyclic polymerization and copolymerization. Part 6: Synthesis and cyclic polymerization of aromatic divinylacetals and divinylfuraldehyde. Vysokom.soed. 3 no.9:1311-1316 S '61. (MIRA 14:9)

1. Institut organicheskoy khimii AN Armyanskoy SSR.
(Vinyl compound polymers) (Furaldehyde)

MATSOYAN, S.G.; SAAKYAN, A.A.

Cyclic polymerization and copolymerization. Part 7: Synthesis and
cyclic polymerization of divinylketals. Vysokom.sped. 3 no.9:
1317-1320 S '61. (MIRA 14:9)

1. Institut organicheskoy khimii AN Armyanskoy SSR.
(Vinyl compound polymers)

MATSOYAN, S.G.; SAAKYAN, A.A.

Synthesis and cyclic polymerization of divinylmercaptals and
divinylmercaptoles. Vysokom.soed. 3 no.11:1755 N '61. (MIRA 14:11)
(Mercaptals and mercaptoles)

15.8140

30886
S/171/61/014/004/003/003
E141/E465

AUTHORS: Pogosyan, G.M., Matsoyan, S.G.

TITLE: Synthesis of polyurethanes by interface polycondensation

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya.
Khimicheskiye nauki, v.14, no.4, 1961, 343-345

TEXT: Polyurethanes were synthesized by interface polycondensation of glycol (ethanediol-1,2; butanediol-1,4; octanediol-1,8; nonanediol-1,9; or decanediol-1,10) diesters of chloroformic acid with ethylene- or hexamethylenediamine. Polycondensation was achieved at room temperature by the contact of two phases; a solution of the diester in CCl₄, and an aqueous solution of the diamine. The ratio of ester to diamine was 1:3, with the excess diamine used as a binding agent for the HCl produced during the reaction. The polyurethanes were formed almost immediately with a yield of ~90%. They can be obtained in the form of a fine powder, if the phases are mixed by stirring, or they can be drawn continuously from the interface boundary in a film-forming sheet. The reaction products were filtered, washed with a 50% aqueous alcohol solution - until the reaction became neutral - and dried in vacuum at 54°C to constant weight. They are soluble in m-cresol.

Card 1/2

30886

S/171/61/014/004/003/003

E

Synthesis of polyurethanes ...

formic acid and hot pyridine; the melting points range from 146 to 220°C and are almost constant for the individual polymers, indicating a high degree of crystallinity. The molecular weights of the products were determined by the specific viscosity of their 0.5% solutions in m-cresol at 20°C. There are 1 table and 3 non-Soviet-bloc references which read as follows:

Ref.1. O.Bayer, Modern Plastics, v.24, 10, 149 (1947),

R.Hill, E.E.Walker, J. Polymer Sci., v.3, 609 (1948),

Ref.2: Brit. Pat. 685729, US Patent 2653886,

Ref.3: N.Rabjohn, J. Am. Chem. Soc., v.70, 1181 (1948),

F.Strain, W.E.Bissinger, W.R.Dial, H.Rudoff, B.J.Dewitt,

H.C.Stevens, J.H.Langston, J. Am. Chem. Soc., v.72, 1254 (1950).

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR
(Institute of Organic Chemistry AS ArmSSR)

SUBMITTED April 25, 1961

Card 2/2

S/080/61/034/002/024/025
A057/A129

AUTHORS: Matsuyan, S.G., Saakyan, A.A.

TITLE: Synthesis of butinediol-1,4 from chloroprene

PERIODICAL: Zhurnal Prikladnoy Khimii, v 34, no 2, 1961, 466-467

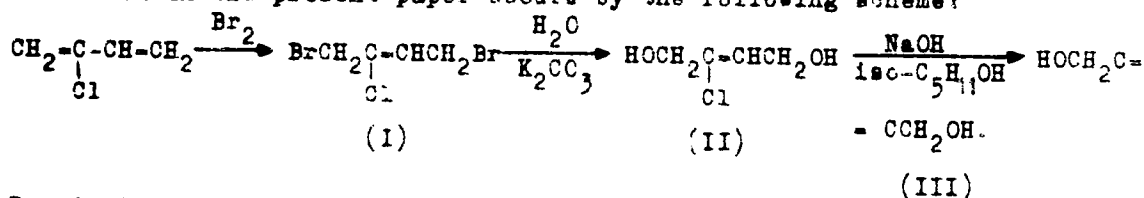
TEXT: This is a new laboratory method for the preparation of butinediol-1,4 from chloroprene by bromination, saponification and following dehydrochlorination of chloro-2-butene-2-diol-1,4. Butinediol-1,4 is important in organic syntheses. It can be prepared from acetylene and formaldehyde by the method described by Zh.I. Iotsikh (Ref 1: ZhRFEKhO, 38, 252 (1906)), or W. Reppe et al. (Ref 2: Lieb. Ann., 596, 25 (1955)). The use of acetyldimagnesiumbromide and gaseous formaldehyde in the first method is laborious, while the second method (normally used in industry) is not suitable for laboratory purposes because of the use of acetylene gas under pressure and the explosive copper acetylide catalyst. Synthesis

Card 1/3

Synthesis of butenediol-1,4 from chloroprene

S/080/61/034/002/024/025
A057/A129

described in the present paper occurs by the following scheme:



Bromination and saponification is accomplished in a single operation without separation of chloroprene dibromide (I). Dehydrochlorination of chlorodiols (II) occurs by heating with sodium iso-amylate (prepared from iso-amyl alcohol and sodium hydroxide). Chloro-2-butene-2-diol-1 was obtained with a 70.2% yield (corresponding to chloroprene) and had a boiling point at 117°-119°C (2.5 torr), n_D^{20} 1.5040, d_4^{20} 1.3213. Butenediol-1,4 was obtained with a 71.4% yield and had a boiling point at 105°-108°C (2 torr) and melting point at 55°-57°C. There are 4 references: 3 Soviet-bloc and 1 non-Soviet-bloc.

Card 2/3

Synthesis of butenediol-1,4 from chloroprene

S/080/61/034/002/024/025
A057/A129

ASSOCIATION: Institut organicheskoy khimii AN Armyanskoy SSR (Institute
for Organic Chemistry of the AS of Armenian SSR)

SUBMITTED: March 31, 1960

Card 3/3

MATSOYAN, S. B.

46

PHASE I BOOK EXPLOITATION

SOV/6195

Nauchnaya konferentsiya institutov khimii Akademiy nauk Azerbaydzhanskoy, Armyanskoy i Gruzinskoy SSR. Yerevan, 1957.

Materialy nauchnoy konferentsii institutov khimii Akademiy nauk Azerbaydzhanskoy, Armyanskoy i Gruzinskoy SSR (Materials of the Scientific Conference of the Chemical Institutes of the Academies of Sciences of the Azerbaydzhani, Armenian, and Georgian SSR) Yerevan, Izd-vo AN Armyanskoy SSR, 1962. 396 p. 1100 copies printed.

Sponsoring Agency: Akademiya nauk Armyanskoy SSR. Institut organicheskoy khimii.

Resp. Ed.: L. Ye. Ter-Minasyan; Ed. of Publishing House: A. G. Silkuni; Tech. Ed.: G. S. Sarkisyan.

PURPOSE: This book is intended for chemists and chemical engineers, and may be useful to graduate students engaged in chemical research.

COVERAGE: The book contains the results of research in physical, inorganic, organic, and analytical chemistry, and in chemical engineering, presented at the Scientific Conference held in Yerevan, 20 through 23 November 1957. Three reports of particular interest are reviewed below. No personalities are mentioned. References accompany individual articles.

Materials of the Scientific Conference (Cont.)

SOV/6195

with functional groups Cl and CN in the alkyl or aryl chains has been investigated to produce new silicon polymers which do not have the defects of high brittleness and low mechanical and adhesive strengths. The first organosilicon monomers synthesized with one double bond polymerized only if Cl was on the Si atom and Si-O-Si bonds were formed. Double bond polymerization was accomplished by synthesizing butadienylsilanes from Grignard reagents (of α and β halogens) and acrylic and crotonic aldehydes. These butadienylsilanes added easily to alkyl lithium compounds to produce intermediates for the synthesis of organosilicon compounds. A 1% solution of H_2PtCl_6 in isopropyl alcohol catalyzed the polymerization of the butadienylsilanes. β -Tri-chlorosilylpropionitrile (I) was synthesized by reacting β -chloropropionitrile (II) with Si-Cu at 370°C; yield: 20% on II. The latter synthesis showed possibilities of other simple and direct syntheses by this method.

Matsuyan, S. O. Investigation of Unsaturated α -Keto Alcohols and Their Esters

288

Card 6/11

2/2

38281

S/190/62/004/006/015/026
B101/B110

AUTHORS: Matsuyan, S. G., Avetyan, M. G., Voskanyan, M. G.

TITLE: Studies on cyclic polymerization and copolymerization.
VIII. Cyclic copolymerization of divinyl acetals with
styrene

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 6, 1962,
882-884

TEXT: The authors studied the bulk copolymerization of divinyl formal, divinyl ethanal, and divinyl butyral with styrene at 80°C in N₂ atmosphere, in the presence of 1 mole% of benzoyl peroxide. The molar ratios of the monomers were varied between 10:90 and 90:10. The resulting copolymers were white powders, soluble in organic solvents. Their composition was calculated from their oxygen content. Infrared spectroscopy showed that the copolymers had no double bonds. Formation of 1,3-dioxane rings in the principal chain of the copolymer is therefore assumed. The copolymer from the initial mixture of 20 mole% of divinyl formal and 80 mole% of styrene (polymerization time 5 hr) contained 3.89 mole% of divinyl formal links and

Card 1/2

Studies on cyclic polymerization ...

S/190/62/004/005/015/026
B101/B110

96.11 mole% of styrene links. The melting point was 121-128°C. With the ratio 80:20 the polymerization took 32 hr, after which copolymer contained 21.89 mole% of divinyl formal and 78.11 mole% of styrene; m.p. 102-112°C. 10 mole% of divinyl ethanal + 90 mole% of styrene yielded, after 4 hr, a polymer containing 5.71% of divinyl ethanal and 94.29% of styrene, m.p. 108-146°C; and with the ratio 90:10, after 80 hr, a polymer containing 42.80% of divinyl ethanal and 57.20% of styrene, m.p. 88-104°C. Data for divinyl butyral + styrene: initial mixture ratio 10:90, 1.5 hr, ratio in the polymer 1.55% divinyl butyral and 98.35% styrene; m.p. 116-120°C; ratio 90:10, 100 hr, 52.94% divinyl butyral, 48.06% styrene, m.p. 50-56°C. The copolymerization constants r_1 of acetals and r_2 of styrene were: for divinyl formal + styrene, $r_1 = 0.05 \pm 0.05$, $r_2 = 8.60 \pm 1.3$; for divinyl ethanal + styrene, $r_1 = 0.02 \pm 0.02$, $r_2 = 6.75 \pm 0.55$; for divinyl butyral + styrene, $r_1 = 0.01 \pm 0.01$, $r_2 = 3.01 \pm 0.6$. There are 4 tables.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR (Institute of Organic Chemistry AS ArSSR)

SUBMITTED: April 10, 1961
Card 2/2

5.3832

³⁹⁸⁴⁴
S/190/62/004/008/002/016
B117/B144

AUTHORS: Matsuyan, S. G., Pogosyan, G. M., Skripnikova, R. K.

TITLE: Study of cyclic polymerization and copolymerization. IX.
Cyclic polymerization of 4-substituted hepta-1,6-dienes in
the presence of radical initiators

PERIODICAL: Vysokomolekulyarnyye soyedineniya, v. 4, no. 8, 1962,
1142 - 1144

TEXT: The authors studied the cyclic polymerization of diallyl malonic and diallyl acetoacetic esters, diallyl acetic acid, and α,α -diallyl acetone heated in the presence of benzoyl peroxide and azoisobutyric dinitrile. With benzoyl peroxide, the polymer yields were higher than with azoisobutyric dinitrile. An increase in polymerization temperature above 80°C (diallyl malonic ester up to 160°C) reduced the yields. Polymers of diallyl malonic and diallyl acetic esters, and diallyl acetic acid, are fusible white powders easily soluble in acetic acid, benzene, carbon tetrachloride, and hot alcohol, having a molecular weight of 12000 - 15000 (determined ebullioscopically). Poly- α,α -diallyl acetone is

X

Card 1/2

Study of cyclic polymerization...

S/190/62/004/006/002/016
B117/B144

a glasslike mass soluble in organic solvents. It was shown that in the course of radical polymerization two vinyl groups of the initial monomers react without cross-linking. Cyclic polymers containing cyclohexane rings in the principal chain, are formed. Finally it was observed that decarboxylation takes place when polydiallyl acetic acid is heated to 300°C, with formation of polyhexahydrobenzyl, a polymer soluble in benzene. There is 1 table.

ASSOCIATION: Institut organicheskoy khimii AN ArmSSR (Institute of Organic Chemistry AS ArSSR)

SUBMITTED: April 24, 1961

Card 2/2

MATSOYAN, S.G.; MORLYAN, N.M.; SAAKYAN, Al'b.A.

Polymerization mechanism of vinyl ethynylcarbinols.

Izv. AN Arm. SSR. Khim. nauki 15 no. 4: 405-406 '62.

(MIRA 15:11)

1. Institut organicheskoy khimii AN Armyanskoy SSR.

(Methanol)

(Polymerization)

MATSOYAN, S.G.; SAAKYAN, A.A.

Cyclic polymerization and polymerization. Report No.18:
Synthesis and study of radical polymerization of divinyl
mercaptals and divinyl mercaptoles. Izv.AN Arm.SSR.(him.
nauki 15 no.5:463-472 '62. (MIRA 16:2)

1. Institut organicheskoy khimii AN Armyanskoy SSR.
(Mercaptals) (Polymerization)
(Radicals (Chemistry))

S/171/62/015/006/005/006
E071/E492

AUTHORS: Matsoyan, S.G., Pogosyan, G.M., Skripnikova, R.K.,
Nikogosyan, L.L.

TITLE: Investigations in the field of cyclic polymerisation
and copolymerisation. Communication 19. A study of
radical polymerisation of certain substituted
heptadienes-1,6

PERIODICAL: Akademiya nauk Armyanskoy SSR. Izvestiya, Khimicheskiye
nauki, v.15, no.6, 1962, 541-551

TEXT: The work is a continuation of previous investigations on
the ability of some substituted heptadienes-1,6 to cyclic
polymerisation and properties of the polymers formed. A number of
heptadienes-1,6 were synthesized namely: diallylacetic acid,
ethyl and phenyl esters, amide, dimethylamide and phenylamide of
diallylacetic acid, diallylcarbinol, acetate and benzoate of
diallylcarbinol, 4-chloroheptadiene-1,6, 2,6-dichloro-4-acetyl-4-
carbethoxyheptadiene-1,6 and their ability to cyclic
polymerisation was investigated. It was shown that on
polymerisation of the above monomers in the presence of radical
Card 1/2